

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Martin E. BANTON **GROUP:** 2609

APPLICATION: 10/717,824 **EXAMINER:** A. Woldemariam

FILED: November 20, 2003 **CONFIRMATION:** 8574

FOR: METHOD FOR DESIGNING NEARLY CIRCULARLY SYMMETRIC
DESCREENING FILTERS THAT CAN BE EFFICIENTLY
IMPLEMENTED IN VLIW (VERY LONG INSTRUCTION WORD)
MEDIA PROCESSORS

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INTERVIEW SUMMARY

A telephonic interview was held on March 31, 2008 with Supervisor Bryan Warner, during which time, the undersigned and Supervisor Warner discussed the Applicant's Amendment under 35 U.S.C. §312(a).

During the telephonic interview of March 31, 2008, Supervisor Warner indicated that the Applicant's Amendments under 35 U.S.C. §312(a) did not raise any issues with respect to 35 U.S.C. §112, first and second paragraphs. Moreover, Supervisor Warner indicated that the Applicant's Amendments under 35 U.S.C. §312(a) reflected the correct version of allowed claim 1.

It was agreed that independent claim 1, as amended from the December 10, 2007 version, should read follows:

Claim 1 (Interview Agreed upon Amendments) A method for descreening a digital image comprising:

- (a) selecting a cut-off frequency and designing therefrom a one-dimensional separable low pass filter (LP), one-dimensional separable low pass filter LP being a row vector having entries $[ZX_{-n}, ZX_{-(n-1)}, \dots ZX_0, \dots ZX_{n-1}, ZX_n]$, wherein n is an integer;
- (b) obtaining a two-dimensional separable filter (LPP) by performing the operation: $LP^* X LP$, LP^* being a column vector having the same entries as one-dimensional separable low pass filter LP, two-dimensional separable filter LPP having dimensions given by: { $2n+1, 2n+1$ };
- (c) generating a two-dimensional contour plot for the two-dimensional filter LPP;
- (d) designing a one-dimensional separable high pass filter (HP), one-dimensional separable high pass filter HP being a row vector having entries $[Y_{-m}, Y_{-(m-1)}, \dots Y_0, \dots Y_{m-1}, Y_m]$, wherein m is an integer;
- (e) obtaining a two-dimensional separable filter (HPP) by performing the operation: $HP^* X HP$, HP^* being a column vector having the same entries as one-dimensional separable high pass filter HP, two-dimensional separable filter HPP having dimensions: { $2m+1, 2m+1$ };
- (f) generating a two-dimensional contour plot for the two-dimensional filter HPP;
- (g) generating a two-dimensional filter (ONE) when the two-dimensional contour plot for the two-dimensional separable filter LPP overlaps the two-dimensional contour plot for the two-dimensional separable filter HPP, two-dimensional filter ONE having the same dimensions of two-dimensional separable filter HPP with the only non-zero entry of value 1 being located at the center of two-dimensional filter ONE;
- (h) subtracting two-dimensional separable filter HPP from two-dimensional filter ONE to create matrix (HPPinv);
- (i) convolving two-dimensional separable filter LPP with matrix HPPinv to obtain non-separable filter DSCRN having dimensions: { $2m+2n+1, 2m+2n+1$ };
- (j) generating a two-dimensional contour plot for non-separable filter DSCRN;

- (k) selecting two-dimensional separable filter LLP and two-dimensional separable filter HHP when the two-dimensional contour plot for non-separable filter DSCRN is an approximation to a desired circular symmetry;
- (l) repeating (a)-(j) when the two-dimensional contour plot for non-separable filter DSCRN is not an approximation to a desired circular symmetry;
- (m) electronically applying the selected two-dimensional separable filter LLP to a digital image to produce a first filtered image;
- (n) electronically applying the selected two-dimensional separable filter HHP to a digital image to produce a second filtered image; and
- (o) subtracting the second filtered image from the first filtered image to generate a descreened digital image.

The discussions ended with Supervisor Warner indicating that the Applicant's Amendments under 35 U.S.C. §312(a) would be entered as it reflected the correct version of allowed claim 1.

Respectfully submitted,



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